

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
12 May 2005 (12.05.2005)

PCT

(10) International Publication Number
WO 2005/043572 A1

(51) International Patent Classification⁷: **H01H 59/00, B81B 3/00**

(21) International Application Number:
PCT/IB2004/052201

(22) International Filing Date: 26 October 2004 (26.10.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
03104044.7 31 October 2003 (31.10.2003) EP

(71) Applicant (for all designated States except US): **KONINKLIJKE PHILIPS ELECTRONICS N.V. (NL/NL);**
Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **DEN TOONDER, Jacob, M., J. (NL/NL);** c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). **VAN DIJKEN, Auke, R. (NL/NL);** c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). **RIJKS, Theodoor, G., S., M. (NL/NL);** c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). **VAN BEEK, Jozef, T., M. (NL/NL);** c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).

(74) Agent: **ELEVELD, Koop, J.;** Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

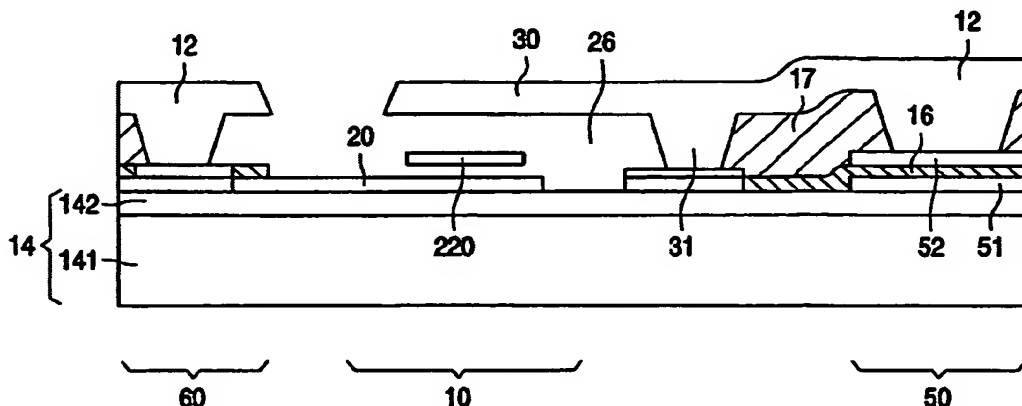
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ,

[Continued on next page]

(54) Title: **RADIO-FREQUENCY MICROELECTROMECHANICAL SYSTEMS AND A METHOD OF MANUFACTURING SUCH SYSTEMS**



(57) Abstract: An RF MEMS device comprising one or more free-standing thin films configured for motion in response to actuation or stimulation, the one or more thin films comprising an alloy of aluminum and magnesium, and optionally one or more further materials. The resultant thin film has improved hardness and reduced creep relative to conventional thin films.